

Seat No. : \_\_\_\_\_

**AE-117**

**April-2016**

**M.Sc., Sem.-IV**

**CHE (O)-509 : Organic Chemistry**

**(Bio-Organic)**

**Time : 3 Hours]**

**[Max. Marks : 70**

- Instructions :** (1) **All** questions are compulsory.  
(2) **All** questions carry equal marks.

1. Answer the following :

- (a) Define buffer and buffer capacity. Discuss Henderson-Hasselbalch equation to check the behaviour of weak acid. 7

**OR**

Giving example discuss the interaction of water on the structure of biomolecules.

- (b) Describe absorption transport, mobilization and biochemical function of Vitamin-K. 7

**OR**

Discuss absorption transport mobilization and Biochemical function of Vitamin-A.

2. Answer the following :

- (a) What is a polypeptide linkage ? In a polypeptide, what does terms N-terminal and C-terminal ? Discuss how Sanger's method is useful to identify the N-terminal residue. 7

**OR**

Define and classify peptides. Discuss Edman degradation for the determination of N-terminal amino acid with its significance.

- (b) What are Enzymes ? Classify them and give diagram, discuss activation energy with reference to catalyst. 7

**OR**

What is enzyme inhibition ? Give an account of reversible enzyme inhibition giving suitable example.

3. Answer the following : 7
- (a) Give complete classification of carbohydrates and its general nomenclature. 7
- OR**
- Define polysaccharides and describe the structure of three homopolysaccharides.
- (b) Give an account of structure, function and nomenclature of nucleotides. 7
- OR**
- Describe the structure of DNA and its replication.
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4. Answer the following : 7
- (a) Give biosynthesis of fatty acid. 7
- OR**
- What are lipids ? Give classification of lipids giving example of each class.
- (b) Give account to check purity of fats and oils at least five parameters. 7
- OR**
- Give a brief account on the biological function of phospholipids and bile acids.
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5. Answer the following : 14
- (1) Giving example define vitamins.
  - (2) Write structure of Vitamin-C.
  - (3) How L (+) lactic acid is converted to L (+) alanine.
  - (4) Give the types of enzyme inhibition.
  - (5) What is fatty acids ?
  - (6) What are glycolipids and glycoproteins ?
  - (7) What is the function of messenger RNA ?
  - (8) Give any two types of Lipoprotein.
  - (9) Define Mutarotation.
  - (10) What are reducing and non-reducing sugar ?
  - (11) Define anti-oxidant.
  - (12) Give structure of Retinal.
  - (13) What are anti-metabolites ?
  - (14) Give the source of carbohydrates.